

Dugway Permit

Module VII

Post-Closure For Non-Notifier Waste Management Units

October 2008

# **MODULE VII**

## **Post-Closure Conditions and Post-Closure Site Management Plans for Closed Hazardous Waste Management Units (HWMUs) and Solid Waste Management Units (SWMUs)**

Dugway Permit

Module VII

Post-Closure For Non-Notifier Waste Management Units

October 2008

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**MODULE VII SPECIFIC POST-CLOSURE FACILITY CONDITIONS AND STANDARDS****VII.A. PURPOSE**

This Permit describes the post-closure requirements for the Solid Waste Management Units (SWMU) and Hazardous Waste Management Units (HWMU) listed in Table VII-1. The modules of this Permit contain general requirements, applicable to all sites. Site-specific requirements, for each SWMU or HWMU, are described in the Attachments and Tables. A list of post-closure requirements and a facility site description is provided in each Attachment.

**VII.B. DEFINITIONS**

- VII.B.1.** For purposes of this Permit, terms used herein shall have the same meaning as those in R315-1 through R315-101, unless this Permit specifically provides otherwise. Where terms are not defined in the regulations or the Permit, then the meaning associated with such terms, shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.
- VII.B.2.** “**ACL**” means Alternative Concentration Limit
- VII.B.3.** “**Approved**” means written approval from the Executive Secretary of the Utah Solid and Hazardous Waste Control Board.
- VII.B.4.** “**Board**” means the Utah Solid and Hazardous Waste Control Board.
- VII.B.5.** “**CDQMP**” means the Chemical Data Quality Management Plan.
- VII.B.6.** “**Days**” means Calendar Days.
- VII.B.7.** “**Dugway**” means Dugway Proving Ground, or “the Facility” (the “Permittee”).
- VII.B.8.** “**Environmental Media**” means air, soil and water and other non-waste like media of natural origin as specified by the Executive Secretary.
- VII.B.9.** “**Environmental Media Treatment System**” means all the parts of the system that are used to extract, treat, and/or inject environmental media.
- VII.B.10.** “**Environmental Media Treatment Unit**” means all parts of the treatment system where environmental media is treated to remove hazardous constituents.
- VII.B.11.** “**Executive Secretary**” means the Executive Secretary of the Utah Solid and Hazardous Waste Control Board.
- VII.B.12.** “**Facility**” means all contiguous land and structures, other appurtenances and improvements on the land, used for treating, storing, or disposing of hazardous waste. A



facility may consist of several treatment, storage, and disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

- VII.B.13. "Hazardous Waste Constituent"** means the chemicals listed in 40 CFR 261 Appendix VIII and IX.
- VII.B.14. "Hazardous Waste"** means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazardous to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed (Reference 40 CFR 261.3).
- VII.B.15. "Hazardous Waste Management Unit (HWMU)"** means those HWMUs listed in Module IV, Table 1 of the Dugway Storage Permit.
- VII.B.16. "Operating Record"** means all monitoring and operational data reports maintained by Dugway Proving Ground or Contract Facility Operators.
- VII.B.17. "Permit"** means a written approval to operate a hazardous waste treatment, storage, or disposal facility within the State of Utah.
- VII.B.18. "Permittee"** means the owner/operator of a facility responsible for implementation of the conditions of this Permit.
- VII.B.19. "Post-Closure Land Use Tracking Plan"** is a plan which includes a process for tracking land use, maintenance of institutional controls, and excavation and management of environmental media for all Post-Closure sites.
- VII.B.20. "Post Closure Permit"** means written approval of Standards Applicable to Owners and Operators of Closed Hazardous Waste Management Units and Solid Waste Management Units concerning Post-Closure care and use of property with in the State of Utah.
- VII.B.21. "Precipitation"** means rain, snow, sleet, or hail.
- VII.B.22. "QAPP"** means Quality Assurance Performance Plan.
- VII.B.23. "R315", or "Utah Administrative Code (UAC) R315",** means R315 of the Utah Administrative Code.
- VII.B.24. "Release"** means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous waste constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

- VII.B.25.** “**Solid Waste Management Unit (SWMU)**” means an area, which has become contaminated through routine and systematic, releases of hazardous wastes or hazardous constituents and a Post Closure Permit was not obtained or a removal action completed as specified by R315-3-1.1(e).
- VII.B.26.** “**Submit**” or “**Submission**” means to be received by hand delivery, mail, certified mail, express mail, facsimile, and/or computer diskette and logged in at the offices of the Division of Solid and Hazardous Waste.
- VII.B.27.** “**Restoration Advisory Board (RAB)**” is a committee/board of representatives from the Department of Defense, U.S. Environmental Protection Agency, Utah Department of Environmental Quality, local government, and public representatives of the affected community. This committee/board meets several times a year, to review, comment, and provide input on environmental restoration activities at Dugway Proving Ground.
- VII.B.28.** “**Utah Registered Professional Engineer**” means any individual who is registered as a Professional Engineer by the Utah Division of Professional Licensing and is qualified by experience and education in the appropriate engineering field.

**VII.C. EFFECT OF PERMIT**

- VII.C.1.** The Permittee shall inspect, monitor and maintain any landfill, caps, fences, signs, treatment systems or other items at the HWMUs and SWMUs listed in Table VII-1 and as specified in the Attachments in accordance with the conditions of this Permit. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local laws or regulations.

**VII.C.2. Proper Operation and Maintenance**

- VII.C.2.a** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment, control and monitoring (and related apparatus) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the Permit.

**VII.C.3. Reporting Planned Changes**

- VII.C.3.a.** The Permittee shall give notice to the Executive Secretary 60 days prior to any planned alteration to the closed HWMU or SWMU or permitted activity.

**VII.C.4. Monitoring and Records**

- VII.C.4.a.** Samples and measurements taken for the purpose of monitoring shall be accurate and representative of the monitored activity. The method used to obtain representative samples shall be an appropriate method from R315-50-6 or as specified or modified by this Permit. Laboratory methods shall be those specified in the *Dugway Resource Conservation Recovery Act (RCRA) Part B hazardous waste storage Permit (Appendix A; Quality Assurance Program Plan (QAPP)) and the Dugway Proving Ground Chemical Data Quality Management Plan (most current version)* or an equivalent method as specified in this Permit. The analysis of all samples, except chemical agents, shall be conducted by State certified laboratories.
- VII.C.4.b.** Pursuant to R315-3-3.1(j), records of monitoring information shall specify:
- VII.C.4.b.i.** The date(s), exact place(s), and time(s) of sampling or measurements;
- VII.C.4.b.ii.** The name(s), title(s), and affiliation(s) of the individual(s) who performed the sampling or measurements;
- VII.C.4.b.iii.** The dates the analyses were performed;
- VII.C.4.b.iv.** The individual(s) who performed the analyses;
- VII.C.4.b.v.** The analytical techniques or methods used; and
- VII.C.4.b.vi.** The results of such analyses, including the Quality Control/Quality Assurance summary.
- VII.C.4.c.** The Permittee may substitute analytical methods, which are equivalent of superior to those specifically approved for use in this Permit by modifying the Permit in accordance with R315-3-4.3. The modification request shall provide information, in terms of sensitivity, accuracy, and precision, demonstrating the proposed method(s) requested to be substituted.
- VII.C.4.d.** The Permittee shall retain as part of the Operating Record all records or reports required by this Permit for the duration of the post-closure period. This period may be extended by request of the Executive Secretary at any time and is automatically extended during the course of any unresolved enforcement action.
- VII.C.5. Reporting Requirements**
- VII.C.5.a** The Permittee shall report to the Executive Secretary any non-compliance with the Permit. Reporting shall not excuse any noncompliance. Reporting shall include, at a minimum, the following:
- VII.C.5.b** Information concerning the non-compliance, which may endanger public drinking water supplies or human health or the environment. Such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances (UAC R315-3-3.1(l)(6)(i)). The description of the occurrence and its cause shall include:

- VII.C.5.b.i.** Name, address, and telephone number of the Permittee;
- VII.C.5.b.ii.** Name, address, and telephone number of the individual making the report;
- VII.C.5.b.iii.** Date, time and type of incident;
- VII.C.5.b.iv.** Description and quantity of materials involved;
- VII.C.5.b.v.** The extent of injuries, if any;
- VII.C.5.b.vi.** An assessment of the actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
- VII.C.5.b.vii.** Estimated quantity and disposition of recovered material that resulted from the incident.
- VII.C.5.c.** A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances (UAC R315-3-3.1(1)(6)(iii)). The written submission shall contain, at a minimum; a description of the non-compliance and its cause; the periods of non-compliance (including exact dates and times); whether the non-compliance has been corrected; and if not, the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance. The Permittee need not comply with the five day written notice requirement if the Executive Secretary waives the requirement and the Permittee submits a written report within 15 days of the time the Permittee becomes aware of the circumstances.
- VII.C.5.d.** Information concerning a non-compliance, which does not endanger human health or the environment shall be provided to the Executive Secretary in writing at the time monitoring reports are submitted (UAC R315-3.1(1)(10)). The description of the occurrence shall include, but not be limited to, all items as listed in Conditions VII.C.5.a.i. through VII.C.5.a.vii. The written submission shall contain, at a minimum; a description of the non-compliance and its cause; the periods of noncompliance (including exact dates and times); whether the non-compliance has been corrected; and if not, the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

**VII.D. SIGNATORY REQUIREMENT**

All applications, reports or other information requested by or submitted to the Executive Secretary shall be signed and certified as required by R315-3-2.2. The Dugway Commander shall sign all Permit applications in accordance with R315-3-2.2(a)(3).

**VII.E. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE**

- VII.E.1.** The Permittee shall maintain for the duration of the post-closure care period, the following documents and amendments, revisions and modifications to these documents:

- VII.E.1.a.** Post-closure Permit and any and all of the amendments.
- VII.E.1.b.** Post-closure monitoring records, to include monitoring of environmental media and analytical results, any environmental media treatment system unit records and analytical results, and records of the effectiveness of any environmental media treatment systems, as required by this Permit.
- VII.E.1.c.** Certification of Closure for each HWMU or SWMU, as required by R315-7-14.
- VII.E.1.d.** Reserved
- VII.E.1.e.** Inspection schedules as required by R315-8-2.6(b)(2) and this Permit.
- VII.E.1.f.** Operating Records required by R315-8-5.3 and this Permit.
- VII.E.1.g.** Copies of all required submittals.
- VII.E.1.h.** Copies of the Dugway's Post-Closure Dig Permit and any other related land use documents and requirements

**VII.F.     REQUIRED SUBMISSIONS**

- VII.F.1.** General required submissions are listed in the Compliance Schedule in Table VII-2. Specific submissions for each closed HWMU are presented in the Attachments of this Permit.
- VII.F.2.** All reports, modifications, notifications, or other submittals that are required to be provided to the Executive Secretary under these Permit provisions shall be sent by certified mail or other means with proof of delivery to:  
  
Executive Secretary  
Utah Solid and Hazardous Waste Control Board P.O.B. 144880  
Salt Lake City, UT 84114-4880.
- VII.F.3.** All hand-delivered submissions shall be made during normal business hours, at the Martha Hughes Cannon Building, Fourth Floor, 28 (8 N 1460 W, Salt Lake City, Utah.
- VII.F.4.** Dugway shall follow the Dig Permit process as described in Module VII Form E. This plan shall include a process for tracking land use, maintenance of institutional controls, and excavation and management of environmental media for all sites listed in Table VII-1.

**VII.G.     HAZARDOUS WASTE MANAGEMENT UNITS UNDER THIS PERMIT**

The HWMUs and SWMUs under this Post-Closure Permit are listed in Table VII-1.

**Table VII-1: Post Closure Permit HWMU's and SWMUs.**

| Attachment, HWMU/SWMU Number, and Location Name                                   | HWMU/SWMU Monument Coordinates UTM NAD 83 (meters) |         |
|---|--|---------|
|   | X  | Y       |
| Attachment 2 - HWMU 7 – Brine Vats West of Granite Peak                           | 1128351  | 7216757 |
| Attachment 3 - HWMU 2 – Waste Pile at the North End of Granite Peak               | 1135980  | 7237805 |
| Attachment 4 - HWMU 33 – Baker Area Sewage Lagoon                                 | 1209103  | 7241880 |
| Attachment 5 - HWMU 124 - Carr Facility Old 3X to 5X Incinerator Pad              | 1252249  | 7232190 |
| Attachment 6 - HWMU 128 - Pesticide Storage Building, Septic Tank and Drain field | 1290753  | 7248502 |
| Attachment 7 - HWMU 36 - Imhoff Tank System                                       | 1238985  | 7238003 |
| Attachment 8 - HWMU 38 - Ditto Decontamination Pad                                | 1240748  | 7236153 |
| Attachment 9 - HWMU 47 - Former English Village Sewer Lagoons                     | 1281777  | 7244858 |
| Attachment 10 HWMU 63-2 - CARR Facility Septic Tank and Leachfield                | 1250622  | 7232898 |
| Attachment 11 - HWMU 169 – Baker Wash Rack  | 1208999  | 7240545 |
| Attachment 12 – SWMU 21 – Disposal Site N. Camelback Ridge                        | 1230464  | 7230361 |
| Attachment 13 - HWMU 37 – Landfill West of Ditto Tech Center                      | 1239720  | 7236812 |
| Attachment 14 – HWMU 43 – Old Landfill for English Village                        | 1294390  | 7242683 |
| Attachment 15 – HWMU 90 – Burn Area East of Carr Facility                         | 1256374  | 7232072 |
| Attachment 16 – HWMU 163 – Fire Training Area                                     | 1242408  | 7238749 |
| Attachment 17 – SWMU 056 – Waste Pile/Landfill/Storage Site, East of Carr         | 1261694  | 7231497 |
| Attachment 18 – SWMU 194 - Landfills, East of Carr                                | 1255991  | 7233066 |
| Attachment 19 - -SWMU 207 - Disposal Trenches and Mounds, Carr                    | 1253667  | 7233464 |
| Attachment 20 – SWMU 213 - Burial Trench, Target S                                | 1169631  | 7206541 |

|   |         |         |
|---|---------|---------|
| Attachment 21 – SWMU 215 - Pigeon Loft Trenches, Downwind Grid      | 1176072 | 7212929 |
| Attachment 22 – SWMU 200 Landfill, SE of Carr                       | 1255878 | 7229462 |
| Attachment 23 – SWMU 054 - Landfill/Disposal Area(s), East of Carr  | 1254379 | 7232152 |
| Attachment 24 – HWMU 055 - Landfill/3X Disposal Site, East of Carr  | 1258619 | 7230967 |
| Attachment 25 - HWMU 058 - Evaporation Pond, Carr                   | 1254505 | 7233389 |
| Attachment 26 - SWMU 197 - Landfill, Old Target Site, Downwind Grid | 1174083 | 7206611 |
| Attachment 27 - HWMU 014 - Ordnance Disposal Site, Downwind Grid    | 1178811 | 7199162 |

**VII.H. COMPLIANCE SCHEDULE**

Reserved

**Table VII-2**

| <b>Submittal</b>              | <b>Due Date</b>                    |
|-------------------------------|------------------------------------|
| Post-Closure Management Plan. | Within 60 days of Permit issuance. |

**VII.I. POST-CLOSURE MAINTENANCE AND MONITORING**

The Permittee shall inspect, maintain, monitor and track activities at the HWMUs and SWMUs listed in Table VII-1 throughout the post-closure care period in a manner that will ensure detection of a release of hazardous waste, hazardous waste constituents, leachate, contaminated runoff or hazardous waste decomposition products to the air, soil, groundwater, or surface water from the closed unit, and in a manner that will prevent unauthorized site use or unauthorized use of any excavated soil. The Permittee shall maintain any and all inspection, monitoring, security, treatment and other necessary equipment throughout the post-closure care period in a manner that will ensure detection of a release from the closed unit and minimize the possibility of fire, explosion, or any sudden or non-sudden release of hazardous waste constituents to air, soil, surface water, or groundwater which could threaten human health or the environment.

**VII.J. SECURITY**

**VII.J.1.** Specific security requirements for each HWMU listed in Table VII-1 are presented in the corresponding Attachments of this Permit.

**VII.K.     GENERAL INSPECTION REQUIREMENTS**

- VII.K.1.**     The Permittee shall follow the inspection schedules as specified in the corresponding Attachments for each site under this Permit. All records of inspections and remedial actions shall be retained in the Operating Record, as indicated in Condition I.G.13.c, throughout the post-closure care period.
- VII.K.2.**     Upon discovering any deterioration or malfunction the Permittee shall perform corrective action as required by R315-8-2.6(c). Corrective action shall be conducted as soon as practicable from the time the problem is discovered. If corrective action is extensive or will require more than 30-days to complete, the Permittee shall provide a corrective action schedule for approval by the Executive Secretary.
- VII.K.4.**     If, upon determination by the Executive Secretary or the Permittee, that any corrective action could endanger human health or the environment, the Permittee shall cease the activity until the problem has been corrected.
- VII.K.5.**     Records of inspections shall be kept at Dugway, as required by R315-8-2.6(d).
- VII.K.6.**     The Permittee shall inspect post-closure groundwater-monitoring wells, at the frequency specified in each site-specific Attachment, as specified below:
- VII.K.6.a.**   Inspect for damage to the above ground casing of the well.
- VII.K.6.b.**   Inspect for damage to cement apron and assure that the annulus is properly sealed.
- VII.K.6.c.**   Check for visible damage and any tampering to locks and monitoring well caps.
- VII.K.6.d.**   Insure that the wells are accessible and visible.

**VII.L.     TRAINING REQUIRMENTS**

The Permittee shall comply with the personnel qualification, training, and training documentation requirements, where applicable, listed in the most recent versions of the documents titled; 1) *Dugway Chemical Data Quality Management Plan (CDQMP)*, and 2) *Appendix A; Quality Assurance Program Plan (QAPP)* of this Permit. The training requirements of the CDQMP and QAPP are hereby incorporated by reference into this Permit.

Additionally, Inspectors of any Post-Closure Care Units shall be trained (documentation required), at a minimum, in the following:

1. Dugway's Contingency Plan
2. Site-specific HWMU/SWMU Post-Closure Inspection Checklists.

**VII.M.     PREPAREDNESS AND PREVENTION**



Preparedness and Prevention measures, for each site listed in Table VII-1, shall be specified in the site-specific Attachments to this Permit, or by compliance with the Dugway Emergency Response and Contingency Plan (Part B Permit), where applicable to each site. Any modifications of this provision shall require the approval of the Executive Secretary.

**VII.N. SAMPLING, ANALYTICAL AND QA/QC PROCEDURES**

Analytical data collected under this Permit shall follow sampling, analytical and QA/QC procedures required under the *Dugway Chemical Data Quality Management Plan (CDQMP)*, and this *Permit (Appendix A; Quality Assurance Program Plan (QAPP))*.

**VII.O. RECORDKEEPING AND REPORTING**

The Permittee shall submit reports and notifications as required in the conditions of this Permit and as specified in the Attachments for each site, to the Executive Secretary documenting post-closure inspection and monitoring activities and results from analyses of samples. Copies of all Permit-related records will be maintained in the Operating Record.

**VII.P. POST-CLOSURE CARE**

**VII.P.1.** For each site listed in Table VII-1, the Permittee shall conduct all post-closure activities in accordance with the post-closure plans as specified in the corresponding Attachments and this Permit. Each post-closure plan shall include information and requirements to satisfy the requirements of R315-1 through R315-101 for closure of landfills, surface impoundments, storage areas, tanks and other units. The Attachments and plans described in Condition VII.Q for each site outline groundwater monitoring, site inspection and other site-specific requirements.

**VII.P.2.** Unless specified in a schedule included in the site-specific Attachment, the Permittee shall submit analytical results from all sampling activities required under this Permit within 180 days of sample collection. A report briefly describing analytical data quality shall be included with the results. If the Permittee cannot meet the 180-day requirement, the Permittee shall contact the Executive Secretary and propose an alternate schedule for approval. The proposal shall include justification for not submitting the information within 180 days.

**VII.Q. GROUNDWATER MANAGEMENT AREAS**

**VII.Q.1.** The Permittee shall manage and monitor groundwater and complete other activities as described in the documents titled Final Hydrogeological Assessment and Regional Groundwater Monitoring Plan, Volumes I-IV, Ditto Groundwater Management Area, , (*Ditto GMA*), *Carr GMA*, *Downrange GMA* and *English Village GMA* , and as described

in the Attachments to this permit. The Final Ditto, Carr, Downrange and English Village GMAs are incorporated by reference into this permit by this condition.

- VII.Q.2.** The Permittee shall provide for approval by the Executive Secretary, a report of all specified activities completed during years 0, years 1-5 and out-years as described in the Ditto, Carr, Downrange and English Village GMAs. These reports shall include data evaluations and conclusions, proposed well locations, sample results, or other information described in the Ditto, Carr, Downrange and English Village GMAs, or as requested by the Executive Secretary.
- VII.Q.3.** The Permittee shall provide all collected data within 180 days of each sampling, testing, data collection or well installation event, and as indicated in the Ditto Carr, Downrange and English Village GMAs.
- VII.Q.4** The Permittee shall provide one copy of all draft groundwater elevation data in searchable electronic format within 30 days of the end of each groundwater elevation measurement event.